

**Commonwealth of Kentucky
Division for Air Quality**

PERMIT APPLICATION SUMMARY FORM

Completed by: John Lewis

GENERAL INFORMATION:

Name:	Martek Biosciences Corporation
Address:	555 Rolling Hills Lane, Winchester, KY 40391
Date application received:	April 13, 1999
SIC/Source description:	2076
EIS #:	21-049-00032
Application log number:	G102
Permit number:	V-00-010

APPLICATION TYPE/PERMIT ACTIVITY:

<input checked="" type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input type="checkbox"/> Synthetic minor
__Significant	<input checked="" type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:017, 1(2)(b) or 51:052,1(14)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☐ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)
PM	7.37	11.1
SO ₂	0.080	0.080
NO _x	13.4	13.4
CO	11.3	11.3
VOC	96.6	163.2
LEAD	0.000	0.000
HAP \geq 10 tpy (by CAS)	Total (hexane) 33.5	57.1

SOURCE PROCESS DESCRIPTION:

The Martek Biosciences facility in Winchester produces two single cell oils, each of which is enriched in a specific fatty acid. One is a triglyceride oil enriched in DHA (docosahexaenoic acid) derived from a marine microalgae (DHASCO®) and the second is a triglyceride oil enriched in ARA (arachidonic acid) derived from a common soil organism (ARASCO®). The process begins when a biomass is produced through cultivation of a starter seed culture, particular to the oil to be produced, in a series of increasingly larger fermentors. After the final fermentation, in the case of the marine algae, the biomass is spray dried. The ARASCO® biomass must be dried through other means at a toll processing facility. The oil is extracted from the dried biomass using a hexane extraction process. The oil is winterized, refined, bleached, and deodorized to produce the final product.